

REMARKS

Claims 4, 13 and 15 are cancelled by the present amendment. New claims 17-23 are presented for consideration. Claims 1-3, 5-12, 14, 16-23 remain at issue.

Claims 1, 4, 10 and 16 stand rejected under 35 USC § 103(a) as being unpatentable over Benedek, U.S. Patent No. 6,027,649 in view of Anselme, U.S. Patent No. 5,364,534.

Claim 1, as amended, is directed to a method for treating drinking water including providing raw water to a process tank, adding an ion-exchange resin to the process tank to form a raw water/ion-exchange resin mixture, removing treated water from the process tank through a membrane filter, wherein the process tank contains the membrane filter, and regenerating the ion-exchange resin in the process tank.

The method recited in claim 1 provides for ion-exchange in a single process tank, removal of treated water through a membrane filter within the process tank and regeneration of the ion-exchange resin within the process tank. This method thus minimizes the number of tanks and equipment necessary for conducting the water treatment process. Not only does this minimize capital and operation/maintenance expenditures, it minimizes the land needed for a treatment facility and the costs attendant thereto.

Benedek is directed to a method of treating water in a membrane system including a membrane filter disposed in a process tank wherein a flocculent is added to the process tank containing the membrane filter for contaminate removal. As conceded by the Examiner, Benedek does not teach the use of an ion-exchange resin for contaminate removal. Rather, Benedek teaches the use of a flocculent which is not separated from the waste system, regenerated and reused.

Anselme is cited by the Examiner as disclosing a process for purifying water, the process including providing ion-exchange resin to the water to be treated and subsequent separation of treated water from the ion-exchange resin by use of a membrane filter. While Anselme teaches recycling of ion-exchange resin from a membrane separator 2 back to a gravity separator upstream of a process tank or "recirculation chamber" 3, Anselme teaches removal of the ion-exchange resin through the gravity separator and does not teach or suggest the desirability of separating the ion-exchange resin from the waste solution and regenerating the ion-exchange resin for reuse. Moreover, Anselme does not teach or suggest the desirability of regenerating the ion-exchange resin in the same process tank to which the ion-exchange resin is added.

Neither Anselme nor Benedek either alone, or in combination, teach the novel combination of steps recited in claim 1. Specifically, neither Anselme or Benedek teach or suggest the desirability of regenerating an ion-exchange resin and certainly fail to teach or suggest the desirability of regenerating an ion-exchange resin in a process tank where ion-exchange is accomplished and from which a membrane filter draws treated water. Thus, claim 1 and claims 2, 3 and 17-20, which are dependent from claim 1, are believed novel and non-obvious over Anselme and Benedek.

Claim 10, as amended, is directed to an apparatus for treating drinking water including a process tank for receiving raw water and an ion-exchange resin supply operatively associated with the process tank to provide ion-exchange resin to raw water within the process tank. A membrane filter is operatively associated with the process tank and contained within the process tank for separating particulate matter from treated water removed from the process tank through the membrane filter. A regenerant supply operatively associated with the process tank and provides saline for regeneration of the ion-exchange resin within the process tank.

Claim 10 in essence recites an apparatus for practicing the method of claim 1. As discussed above, neither Anselme or Benedek teach or suggest the desirability providing a single process tank containing a membrane filter for removal of treated water and providing an ion-exchange resin to the raw water within the process tank. Moreover, neither Anselme or Benedek teach or suggest the further step of providing a regenerant supply in operative association with the process tank to provide for regeneration of the ion-exchange resin in the same process tank. Thus, claim 10 and claims 11, 12, and 14-16, which are dependent from claim 10, are believed novel and non-obvious over a combination of Anselme or Benedek.

Connor, U.S. Patent No. 5,728,302, which is cited by the Examiner in combination with Anselme or Benedek as the basis of the rejection of claims 2 and 3 under 35 USC § 103(a), fails to satisfy the deficiencies in the teachings of Anselme or Benedek. Connor is cited by the Examiner as disclosing an ion-exchange resin having magnetic properties and as allegedly suggesting using an ion-exchange resin having magnetic properties for the treatment of water to remove contaminants such as arsenates, barium, fluoride, selenites and the like. However, Connor does not teach or suggest the desirability of regenerating the magnetic ion-exchange resin used in its *in situ* treatment process. To the contrary, Connor teaches the use of a magnetic ion-exchange resin because of improved resin attraction in the subterranean injection zone due to attraction

between the resin and surrounding sand matrix by magnetic attraction, or other phenomena. See column 6, lines 49-54. Thus, rather than suggesting the use of a magnetic ion-exchange resin capable of recapture and regeneration, a concept incorporated in claims 1 and 10 as amended, Connor teaches an ion-exchange resin intended to permanently reside in soil to be treated.

Kochen, U.S. Patent No. 5,595,666, is cited by the Examiner in combination with Anselme, Benedek and Connor for the rejection of claims 6-8, 11 and 13-15. The Examiner asserts that Kochen teaches regeneration of a magnetic ion-exchange resin by treating the resin with KOH or NaOH. Regardless of whether Kochen may teach or suggest regeneration of a magnetic resin, Kochen does not teach or suggest the desirability of regenerating the resin in the same process tank used for ion-exchange and which contains a membrane filter for removing treated water. Thus, Kochen does not overcome the deficiencies of the teaching of the other prior art references, and Applicant respectfully submits claims 1 and 10 and their dependent claims stand patentable over a combination of Anselme, Benedek, Connor and Kochen.

Claims 5, 9 and 12 are objected to as being dependent upon a rejected base claim, but indicated as being allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 5 has been amended as suggested by the Examiner to include each of the limitations of claim 1 after entry of the preliminary amendment. Thus, claim 5, as amended, is believed in condition for allowance. Claims 6-9 are dependent from claim 5 and are therefore believed to be allowable for the same reasons as claim 5.

New claims 17-21 are dependent from claim 1 and recite in greater detail the claimed method for treating drinking water. These claims are believed to be allowable for the same reasons set forth with respect to claim 1. Claims 22 and 23 are dependent from independent claims 5 and 10, respectively, and are believed allowable for the same reason as claims 5 and 10.

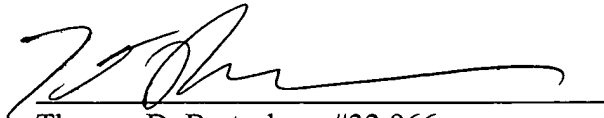
Applicant respectfully submits claims 1-3, 5-12, 14 and 16-23, as amended, are now in condition for allowance. Reconsideration and allowance of the claims in their amended form are respectfully requested.

If it would be helpful to obtain favorable consideration of this case, the Examiner is encouraged to call and discuss this case with the undersigned.

This constitutes a request for any needed extension of time and an authorization to charge all fees therefore to deposit account No. 19-5117 if not otherwise specifically requested. The

undersigned hereby authorizes the charge of any required fees not included or any deficiency of fees submitted herewith to be charged to deposit account No. 19-5117.

Respectfully submitted,



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